

popular matter, recalling to their minds some of the scenes in connection with their own captures, or serving as a stimulant for future expeditions. But after all it is the *plates* that will be most frequently consulted. Of these there are seventy-seven, mostly crowded with figures, and including a few of transformations. Without the recent adaptation of chromo-lithography, in a superior form, to natural history subjects, the publication of such a work as this (at the price) would have been impossible. The author estimates that there are more than 800 figures on these plates. It is impossible here to criticise them *seriatim*. Those subjects that appear the most difficult are often the best (perhaps more detail in the way of "stones" was used on them), and we are much pleased with the *Hesperidæ*, which, easy as they may look at first sight, must prove very troublesome of application. The "Blues" and "Coppers" (*Lycenidæ*) are fair, but naturally fail in effect where metallic colours are necessary. The worst, to our mind, are those of the *Satyridæ* (of which our "meadow-brown" is a familiar example), and yet they *look* the easiest: we think here there is evidence of trying to make too many species, with varying shades of practically the same colour, accommodate themselves to one "stone." The size is rather too large for a book to be used as a travelling companion, but we think it is rather intended for home study. Paper and type are very good (the former almost unnecessarily so). There is not much to find fault with in the way of uncorrected errors. This is satisfactory, because careless correction is the crying evil of the present day, even in works claiming a much higher scientific position than does this, and often shows up the amount of knowledge possessed by writers of the authors and works they quote. But such glaring errors as the following should not have escaped correction:—Page 47, "Illus. Mag." for "Illiger's Mag."; p. 61 (and elsewhere), "Wein" for "Wien"; p. 153, "Sellmann's" for "Silliman's"; p. 380, "Thurnberg" for "Thunberg"; and, as a crowning morsel, p. 379, "Aumer Kungen" for "Anmerkungen." In notices of some of the recent additions from Central Asia, the author uses indiscriminately (sometimes on the same page) "Samarcand" and "Maracand" as localities; we thought it was generally understood that the latter is only the ancient name of the former.

We have hitherto dealt with this work from a popular point of view. But there is also the scientific side of the question. The book will be of service as collectively giving good descriptions and figures of all known European species brought down to date, and thus avert the necessity of search through a multitude of scattered publications; and in this it will be useful to other than English readers.

On the title-page the author adopts a super-title—"Rhopalocera Europæ." This we think a pity in a work otherwise entirely in the English language.

R. McLACHLAN

ELEMENTARY MATHEMATICS

Lehrbuch der Elementaren Mathematik. V. Schlegel. Pp. 712. (Wolfenbüttel, 1878-1880.)

WE have not had the good fortune to meet with this work, but having now before us an elaborate notice of it by M. Hoüel in the *Bulletin des Sciences*,

Mathématiques et Astronomiques, December, 1882 (pp. 301-313), we have thought that a few passages from the notice would be acceptable to some of our readers, and lead them to a personal examination of the original treatise.

The writer's opening remarks have much truth in them:—"Nous sommes habitués depuis longtemps à considérer l'apparition d'un traité élémentaire de mathématiques comme un événement pédagogique ou commercial n'ayant rien de commun avec la science pure. Si l'on met à part quelques honorables exceptions, c'est toujours le même livre qui reparait sous une couverture de couleur différente, avec quelques pages transposées, quelques propositions secondaires introduites ou supprimées, quelques démonstrations modifiées sinon perfectionnées, quelques développements de plus suivant les tendances des programmes officiels. Quant à la manière d'exposer les principes fondamentaux de la science, rien n'est changé. Les découvertes qu'on a faites dans les hautes mathématiques depuis un siècle et qui ont si admirablement éclairci les difficultés que présentaient encore les éléments d'algèbre semblent étrangères à nos auteurs, qui expliquent les imaginaires comme au temps de Bézout et de Lacroix, et présentent parfois à leurs lecteurs des notions géométriques en arrière de beaucoup sur celles qu'exposait Euclide il y a plus de deux mille ans. . . . En Angleterre, l'enseignement est resté ce qu'il était au temps de Barrow et de Simpson; heureusement le vieil Euclide a été choisi et fidèlement conservé à l'abri des prétendus perfectionnements des traités modernes."

M. Victor Schlegel is a pupil of H. Grassmann, and his present work is inspired by the bold views of the author of the "Ausdehnungslehre." It consists of four volumes devoted to arithmetic, algebra, plane and solid geometry, and plane and spherical trigonometry. Vol. i., "Arithmetik und Combinatorik" (182 pp.), treats of elementary algebra and of the theory of combinations. "Le tout est exposé avec une concision qui n'exclut pas la clarté, et avec une rigueur irréprochable." The reviewer's attention is especially directed to an analysis of vol. ii., "la partie vraiment originale de l'ouvrage." In 222 pages are laid down the principles of plane geometry, the ideas in which are those first introduced, we believe, by Grassmann. A full statement is given of the fundamental hypotheses, and the treatise consists of two sections. The first, "Geometry of Figures in Motion," naturally discusses the geometry of the straight line and of the plane; the second, "Geometry of Figures at Rest." A collection of 737 exercises closes the book. The following remark by M. Hoüel is deserving of a place here:—"La tendance de la nouvelle école à remplacer le raisonnement par le coup d'œil nous semble éminemment dangereuse. Le sentiment de la forme est un précieux auxiliaire, auquel les illustres inventeurs de la géométrie pure ont dû une grande partie de leurs découvertes: mais rien en mathématiques ne peut dispenser de la démonstration, d'autant plus que cette partie de la tâche est en général la plus aisée. Dans le cas actuel, la marche d'Euclide n'est pas plus longue, et ne laisse aucun doute dans l'esprit."

The third volume, Rectilinear (or Plane) Trigonometry, is founded, in like manner with the second, on a treatise on the subject published by Grassmann in 1865.

Approving in the main of this volume, we gather that the reviewer differs from the author on some points. M. Houël's views we have lately come across in "Rémarques sur l'enseignement de la Trigonométrie" (a paper originally printed in the *Giornale di Matematiche*, t. xiii., 1875, and reproduced in the *Mémoires de la Société des Sciences Physiques et Naturelles de Bordeaux*, 2^e série, tome v., 1882, pp. 197-209). He altogether approves of M. Schlegel's appendix, containing a table of *rational* right- and oblique-angled triangles "où l'on puise d'excellents exercices de calcul numériques."

The fourth volume, devoted to Solid Geometry, is prefaced by an introduction in which the author discusses the most convenient methods for getting clear ideas of figures in space, viz., by the use of models in relief and by stereoscopic images (at the end are plates, corresponding, we presume, to Clerk Maxwell's stereograms, of polyhedra).

"Un auteur se disposant à écrire un traité classique ne saurait trouver une meilleure préparation que la lecture du livre de M. Schlegel, où il apercevrait tant d'horizons nouveaux, inconnus à la routine, et qui eux-mêmes peuvent conduire à des découvertes ultérieures."

We must not omit to state that M. Houël objects to some of the ideas put forward; but the grounds on which he commends the "Lehrbuch" (in addition to others adduced above) are thus summed up:—"Quoi qu'il en soit, nous sommes si peu accoutumés à rencontrer dans les manuels de géométrie des idées neuves et hardies, que nous n'hésitons pas à saluer comme un heureux événement dans la littérature géométrique l'apparition de ce traité, où le disciple fidèle de Grassmann s'est fait le sagace interprète des idées du maître sur l'enseignement élémentaire."

OUR BOOK SHELF

The Edible Mollusca of Great Britain and Ireland. With Recipes for Cooking Them. By M. S. Lovell. (London: L. Reeve and Co., 1884.)

WE have received the second edition of this interesting, useful, and in some respects most amusing book. The primary object of the author is to call attention to the qualities and merits of many kinds of shell-fish which are as nutritious as others which are generally known, but which are rarely met with in our markets, or are only used locally for food, while the proper modes of cooking them are scarcely known. Accordingly all the known species of edible shell-fish on our coasts are here described in succession, with the various modes of cooking them. This alone would make the volume of great use at a time when we are going to the uttermost ends of the earth for the sources of our food-supply, and when public attention has been so powerfully drawn to our fisheries by the Exhibition of last year at Kensington. But when we add that the writer has collected from the most varying sources—from an "old M.S." to the Bridgewater Treatises, and from Athenæus to the latest book of travels that is having its little day,—a mass of curious lore about shell-fish, their uses, and the mode of catching them in various parts of the globe, their medicinal properties, the popular superstitions about them, &c., it will be perceived that this is much more than a work on natural history *plus* a cookery-book. If the title were not too suggestive of dulness for such an amusing volume, one would feel inclined to say that "Encyclopædia of the Edible Mollusks" would be a suitable title. And when we examine the formidable list of works "referred to or consulted"

at the end, filling with mere titles thirteen pages, we cease to wonder at the out-of-the-way information contained in the volume. Of the nineteen sections in which the subject is treated, that on the *Ostrea* is, as might be expected, the longest, although that on the *Helicidae*, which is also comparatively long, appears to us the most amusing. We hear of many infallible corn solvents, corn-destroyers, and the like, but the prescription of Master Ralph Blower, who wrote a certain "Rich Storehouse or Treasure for the Diseased," possesses at least the merit of originality. Here it is. "Take black sope and snails, of each a like quantitie, stampe them together, and make plaister thereof, and spread it upon a piece of fine linnen cloth, or else upon a piece of white leather, and lay it upon the corne, and it will take it cleane away within seven dayes space." Master Blower who, by the way, wrote "for the benefit of the poorer sorts of people that are not of abillitie to goe to the Physicians," supplies the recipes for other cunning decoctions of snails, as do several other physicians who are quoted. Snail-water appears to have been considered a sovereign cure for consumption; but it may not be generally known that a large trade in snails is carried on for Covent Garden Market in the Lincolnshire Fens. They are sold at 6d. per quart, and it appears that they are still much used for consumptive patients and weakly children. Of all the many uses of snails in various parts of the globe, the strangest perhaps is that discovered by the London adulterator. They are much employed, the author assures us, in the manufacture of cream, being bruised in milk and boiled, and a *retired* milkman pronounced it the most successful imitation known! There are, we should say in conclusion, many beautifully coloured illustrations.

Forestry in the Mining Districts of the Ural Mountains in Eastern Russia. Compiled by John Croumbie Brown, LL.D., &c. (Edinburgh: Oliver and Boyd; London: Simpkin, Marshall, and Co., 1884.)

STILL another book on forestry by Dr. Brown, uniform in size and binding with those that have preceded it. We have before alluded to the readable character of Dr. Brown's books, and the one before us is no exception to those on "The Forests of England" and the "French Forest Ordinance of 1669"; indeed it is perhaps more popular in its style, which Dr. Brown is not entirely responsible for, as he states on his title-page that it is a compilation, and the free use of inverted commas shows it to be so to a great extent. Though the book may contain a very good description of the country under consideration and accounts of the several journeys made in Russia, we are bound to say that not more than half deals with forestry matters. Thus we have one chapter devoted to the journey from St. Petersburg to Moscow, including a description of the Nijni Novgorod Fair. Another chapter describes the "Mishaps and Difficulties Experienced in Travelling"; another "Metallurgy"; and another "Depressed Condition of Mining, Smelting, and Manufacturing Establishments." The chapters that deal with forestry in some form or another are on "Forest Exploitation in the Government of Ufa"; "Abuses in Connection with the Exploitation of Forests"; a short one on "Forests," &c.

It may be stated that Dr. Brown's several works on "Forestal Literature" were awarded a silver medal at the recent Forestry Exhibition in Edinburgh, a fact to which he draws attention at the commencement of the present volume.

Die pyrenäische Halbinsel. Von Dr. Moritz Willkomm. II. Abteilung: "Spanien." (Leipzig: G. Freytag, 1884.)

THIS forms one of a series of volumes on the countries of the world, and appears to be part of a German "Universal-Bibliothek" entitled "Das Wissen der